

CLAIMS

✓ 1. A method for detecting the acetyltransferase activity in a test peptide, comprising the steps of:

- 5 (a) contacting a test peptide with a peptide substrate, and,
(b) detecting an acetyl group binding to the peptide substrate using an anti-acetylated peptide antibody.

✓ 2. A method for screening a compound that inhibits or enhances the activity of acetyltransferase, comprising the steps of:

- 10 (a) contacting acetyltransferase with a peptide substrate in the presence of a test compound,

(b) detecting an acetyl group binding to the peptide substrate using an anti-acetylated peptide antibody, and,

- 15 (c) screening a compound that decreases or increases the detected amount of the acetyl group binding to the peptide substrate in comparison with the amount in the absence of the test compound.

3. A method for detecting the deacetylase activity in a test peptide, comprising the steps of:

- 20 (a) contacting the test peptide with an acetylated peptide substrate, and,

(b) detecting an acetyl group binding to the substrate peptide using an anti-acetylated peptide antibody.

✓ 4. A method for screening a compound that inhibits or enhances the deacetylase activity, comprising the steps of:

- 25 (a) contacting deacetylase with an acetylated peptide substrate in the presence of a test compound,

(b) detecting an acetyl group binding to the peptide substrate using an anti-acetylated peptide antibody, and,

- 30 (c) screening a compound that decreases or increases the detected amount of the acetyl group binding to the peptide substrate in comparison with the amount in the absence of the test compound.

5. The method of any one of claims 1 to 4, wherein the peptide substrate is p53.

6. The method of any one of claims 1 to 4, wherein the peptide

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substrate is labeled.

7. The method of claim 6, wherein the label is biotin.

8. The method of any one of claims 1 to 4, wherein the peptide substrate is immobilized on a solid phase.

5 9. The method of any one of claims 1 to 4, wherein the anti-acetylated peptide antibody is labeled.

10. The method of any one of claims 1 to 4, wherein the acetyl group binding to the peptide substrate is detected by ELISA.

✓ 10 11. A method for screening a compound that inhibits the deacetylase activity or a compound that enhances the activity or expression of acetyltransferase, comprising the steps of:

(a) contacting a test compound with cultured cells,

(b) immobilizing said cultured cells,

15 (c) detecting an acetyl group on a specific protein in said cultured cells using an anti-acetylated peptide antibody, and,

(d) screening a compound that increases the acetyl group on said specific protein in comparison with a control untreated with the test compound.

20 12. A method for screening a compound that inhibits the deacetylase activity of histone or a compound that enhances the activity or expression of acetyltransferase of histone, comprising the steps of:

25 (a) providing cultured cells carrying a vector comprising a promoter that functions within cultured cells and a reporter gene ligated to the downstream of said promoter,

(b) contacting a test compound with said cultured cells, and,

(c) screening a compound that increases the reporter activity, in comparison with a control untreated with the test compound.

30 13. A compound isolable by any one of the screening method of claims 2, 4, 11, and 12.

14. The compound of claim 13, wherein the compound is derived from nature.

15. A kit for the detecting or screening method of any one of claims 1 to 4, and 11, comprising an anti-acetylated peptide antibody.

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